

REMARKS/ARGUMENTS

Claims 1-21 are pending.

Claim 1 has been amended to clarify the Markush group.

Claims 2, 9, and 16 were objected to because they contained extraneous characters in the formulas. Those characters were due to the program used for electronic filing; the versions presented here without the extraneous characters are considered to be Original.

Claims 3-4, 10-11, and 17-18 were objected to as being unclear. Corrections according to the Examiner's suggestions have been made. These amendments are not made for the purposes of patentability.

Claims 1, 8, and 15 are rejected under 35 U. S. C. 102(b) as being anticipated by disclosures in EP 0278540B1. Claims 1 and 8 have been amended to specify that the source of the reducing agent is selected from carbohydrazides, semicarbohydrazides, aldoximes and ketoximes.

Claims 1-4, 8-11, and 15-18 are rejected under 35 U. S. C. 103(a) as being unpatentable over EP 0278540B1 in view of Nimerick (US 3,799,914) and, optionally, further in view of Riley *et al.* (US 3,238,226). The amended claims limit the source of the reducing agent to carbohydrazides, semicarbohydrazides, aldoximes and ketoximes. Nimerick in view of Riley discloses that carbohydrazide can be a source of hydrazine in an acidic fracturing fluid. The argument presented in the paragraph below applies to this rejection as well.

Claim 1-21 are rejected under 35 U. S. C. 103(a) as being unpatentable over EP 0278540B1 in view of Pakulski *et al.* (US 5,362,408) and Bossler *et al.* (US 5,108,62), and optionally further in view of US Patents 3,238,226; 4,202,765, and 4,476,033. The amended claims limit the source of the reducing agent to carbohydrazides, semicarbohydrazides, aldoximes and ketoximes. The cited references indicate that these materials can be potential sources of hydrazine and hydroxylamine. However, as stated

in the current specification in paragraph [009] (as numbered in the substitute specification), for use in the present invention the source must be of low toxicity, must be of suitable reactivity, and must be compatible with other components so that residue is reduced. As stated in the section on Ecotoxicity in paragraph [0027] of the current specification (as numbered in the substitute specification), the compounds of the present invention are of low toxicity and safer for personnel and for the environment. The cited references give long lists of possible reducing agents and sources, suitable for various uses, but do not indicate which would be suitable in the present invention and which would not. A reducing agent or source of a reducing agent that is suitable for high temperature stabilization, for breaking of polymers in uncrosslinked polymer gels, or for oxygen scavenging, may or may not be suitable in the present invention. Tests described in the current specification show that the sources of the present invention are suitable and often superior while many listed by the cited references are not. Nimerick's breakers work by attacking the polymer; Nimerick's gels are not crosslinked. Nimerick teaches in his example 10 that his breakers "unexpectedly" work in the presence of FeCl_2 or FeCl_3 which would not suggest trying them to reduce ferric to ferrous in the exact way needed in the present invention. The specification teaches at the bottom of page 15 that iron reduction should be minor until 99% of the acid spends. Nimerick is silent on pH. Pakulski teaches that his compounds may be used "at basic or acidic conditions" (col. 3, lines 43-51) and data are shown for pH's of 3.5 and 9.5. Pakulski teaches that carbohydrazide may be a substitute for toxic hydrazine, but does so in a paragraph that lists many oxygen scavengers, including "ammonium erythroborate" [sic] which the reference cited by Pakulski (US4419327) shows should have been "ammonium erythorbate" which is shown in the present specification (paragraph [0012] as numbered in the substitute specification) to be too active (in the sodium form) in strong acid. Pakulski teaches that oximes are suitable for his purposes with Ti- and Zr-crosslinked gels but never mentions iron. Bossler is specifically intended for use at ambient temperature (abstract). Bossler lists diethylhydroxylamine as suitable (col. 2, lines 15-16). It is shown in Tables 3 and 4 that diethylhydroxylamine is too active in the reduction of iron at low pH. Bossler lists ascorbic acid as suitable (col.2, lines 19-20);

the present specification states in paragraph [006] (as numbered in the substitute specification) that ascorbic acid is not suitable in the present invention. The discussion at the bottom of page 18 and the results in Table 7 of the specification show that the compounds of the invention are superior to hydrazinium hydrochloride because they leave less residue. The diversion tests shown and discussed on pages 20 and 21 of the specification demonstrate that a fluid containing hydrazinium hydrochloride decreases a core's permeability, while a fluid containing 2-butanoneoxime increases a core's permeability. Hydrazinium hydrochloride was in Nimerick's list of suitable hydrazine sources.

Applicants respectfully point out that Nimerick, Pakulski, and Bossler merely provide lists of compounds suitable for their needs, but that the requirements of the present invention differ from those of their inventions. The cited references each teach compounds that experimental evidence in the present specification shows are not suitable in the present invention, and the cited references do not, alone or in combination, teach how to select from their lists the compounds that are suitable in the present invention.

Applicants respectfully request that a timely Notice of Allowance be issued in this case.

Should any additional fees be due, the Commissioner is hereby authorized to deduct said fees from Deposit Account No. 04-1579 (56.0620).

Respectfully submitted,



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